

direction crossing the passing direction of the papers at the discriminating portion, and the sensor output abnormality detecting portion detects that the output of a specified number or less of the sensor devices among the plural sensor devices is faulty as a specified abnormal status, and detects the status wherein all the sensor devices with faulty output are sensor devices in the passing area of the papers to be objectives of processing as a first abnormal status among the specified abnormal statuses, and also detects the status wherein sensor devices out of the passing area are included in the sensor devices with faulty output as a second abnormal status among the specified abnormal statuses.

REMARKS

INTRODUCTION:

In accordance with the foregoing, claims 1-9 have been amended. Claims 1-9 are pending and under consideration. No new matter is being presented.

REJECTION UNDER U.S.C. §112:

In the Office Action, at page 2, the Examiner rejected claims 1-9 under 35 U.S.C. § 112, second paragraph. Applicant submits that the antecedent basis rejections enumerated by the Examiner are overcome in view of the amended claims as submitted herein.

REJECTION UNDER 35 U.S.C. §102:

In the Office Action, at page 3, the Examiner rejected claims 1, 2, 4-6 under 35 U.S.C. § 102 (b) as being anticipated by Sugai et al (US 5,019,249). The reasons for the rejection are set forth in the Office Action and are therefore not repeated. The rejection is traversed, and reconsideration is requested.

According to Sugai, a cleaning operation is interrupted when a customer makes a transaction (see Fig. 21, and column 18, lines 36-52). In other words, sensor cleaning and transaction processes are mutually exclusive; the processes can not be performed in parallel. According to the present invention, however, sensor cleaning and transaction processes are performed in parallel.

For example, amended claim 1 recites a paper processing device comprising: "a transfer control portion that starts the one process even when either of the specified abnormal status or normal status is detected ... and in the case where the specified abnormal status is detected in the initial detecting process, transfers papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process..."

Additionally, according to Sugai, structural elements are required to clean sensors (a lever 316 having a cleaning member 315, FIGS. 15 and 17, and column 18, lines 1-13, for example).

In contrast, according to the present invention, sensor cleaning is performed by the transfer of papers (bills and mock bills) during operation. No additional cleaning structure is required.

For example, amended claim 1 recites a paper processing device comprising: "a transfer control portion that ... transfers papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process..."

Accordingly, independent claim 1 patentably distinguishes over the cited prior art and should be allowable for at least the above-mentioned reasons.

Further, in the Office Action, at page 3, the Examiner rejected claims 2 and 4-6. Claims 2 and 4-6, which depend from claim 1, should also be allowable for the reasons set forth above regarding claim 1, as well as the recitations therein.

REJECTION UNDER 35 U.S.C. § 103:

In the Office Action, at page 4, the Examiner rejected claim 7 under 35 U.S.C. § 103 (a) as being unpatentable over Sugai et al. in view of Goto et al. (JP 11-102456). The reasons for the rejection are set forth in the Office Action and are therefore not repeated. The rejection is traversed and reconsideration is requested.

As noted above in the discussion under 35 U.S.C. § 102 (b) regarding claim 1, according to Sugai, the sensor cleaning and the transaction processes do not occur in parallel. While Goto teaches use of a line sensor, there is no teaching of parallel cleaning and transaction processes. The only method of cleaning sensors indicated in Goto is to notify "a

clerk in charge” of the positions on the line sensor of paper pieces and stains (Goto Abstract). This implies that the “clerk in charge” is responsible for cleaning the sensor at some future point, necessitating an interruption in the transaction process.

As noted previously, in the present invention, sensor cleaning and transaction processes are performed in parallel. Specifically, amended claim 1 recites a paper processing device comprising: “a transfer control portion that starts the one process even when either of the specified abnormal status or normal status is detected ... and in the case where the specified abnormal status is detected in the initial detecting process, transfers papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process...”

Thus, while the combination of Sugai and Goto may yield a machine that functions longer between cleaning than the machine of Sugai alone, the transaction process must still be interrupted for cleaning. The combination does not teach sensor cleaning and transaction processes occurring in parallel.

Thus, Applicant submits that claim 7, which depends from claim 1, should also be allowable for the reasons set forth above regarding claim 1, as well as the recitations therein.

In the Office Action, at page 4, the Examiner rejected claims 1 and 3 under 35 U.S.C. § 103 (a) as being unpatentable over Ono et al. (US 5,450,937) in view of Nei et al. (JP 5-324984). The reasons for the rejection are set forth in the Office Action and are therefore not repeated. The rejection is traversed and reconsideration is requested.

Ono provides a device to prevent illegal extraction of paper currency (e.g. pulling out the paper currency using a thread or tape attached to the paper currency) after the paper currency is determined to be genuine currency. More precisely, Ono describes a mechanism to prevent paper currency from going backwards to an opening.

Sensors of Ono’s device only detect the passage of the paper currency before it is determined to be genuine. If these sensors are off when the device is turned on, it means that there is some abnormality in the device. But such abnormality is merely described as a jam or breakdown of the sensors, and the device starts a recovery process in which a transfer belt runs in reverse. Therefore, it is impossible for Ono’s device to realize the feature of the present invention, i.e., process paper currency while the abnormality is detected, and to later detect whether the abnormality still exists.

For example, amended claim 1 recites a paper processing device comprising: "a transfer control portion that starts the one process even when either of the specified abnormal status or normal status is detected in an initial detecting process ... and in the case where the specified abnormal status is detected in the initial detecting process, transfers papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process of the sensor output carried out after the start of the one process..."

Further, as previously noted above in the discussion under 35 U.S.C. § 102 (b) regarding claim 1, according to the present invention, sensor cleaning is performed by the transfer of papers (bills and mock bills) during operation. For example, amended claim 1 recites a paper processing device comprising: "a transfer control portion that ... transfers papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process..."

Ono describes no such feature of the present invention, and is not even related to the present invention. Therefore, even if Ono is combined with a pool portion of Nei, the present invention would not be realized.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Please Note Effective June 28, 2003, Staas & Halsey LLP will be moving to the following address:

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CERTIFICATE UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231

on June 10, 20 03
STAAS & HALSEY
By: Michael A. Bush
Date: 6-10-03

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND claims 1-9 in accordance with the following:

1. (ONCE AMENDED) A paper processing device which [comprises] includes a discriminating portion to sense papers passing by a specified sensor, and by carrying out a discriminating process according to the result of the sensing to apply one of plurally classified discriminating results to the sensed papers, and wherein, in every process, one paper or more to be objectives of [the] one process is transferred one by one along a transfer route that passes through the discriminating portion, and transfer routes of each paper after passing through the discriminating portion is changed according to discriminating results at the discriminating portion, the paper processing device comprising:

a sensor output abnormality detecting portion that carries out a detecting process to detect that the output of the sensor is in a specified abnormal status according to the output of the sensor before [the] a start of the one process, and when the specified abnormal status is detected in the detecting process conducted before the start of the one process, further carries out a detecting process to detect the output of the sensor also after the start of the one process; and

a transfer control portion that starts the one process even when either of the specified abnormal status or normal status is detected in [the] an initial detecting process conducted before the start of the one process by the sensor output abnormality detecting portion, and in the case where the specified abnormal status is detected in the initial detecting process, transfers papers that pass through the discriminating portion after the start of the one process until normal status is detected in the detecting process of the sensor output carried out after the start of the one process, along a transfer route corresponding to the specified abnormal status after they pass through the discriminating portion.

2. (ONCE AMENDED) The [A] paper processing device according to claim 1, wherein the discriminating portion carries out a discriminating process including a discriminating result that a paper is abnormal as one of the discriminating results, and

the transfer control portion transfers, in the case where the specified abnormal status is detected in the initial detecting process conducted before the start of one process by the sensor output abnormality detecting portion, papers that pass through the discriminating portion after

the start of the one process until normal status is detected in the detecting process carried out after the start of the one process, along the same transfer route as the case wherein discriminating result that a paper is abnormal is obtained at the discriminating portion.

3. (ONCE AMENDED) The [A] paper processing device according to claim 1, further comprising a pool portion for storing papers that have been transferred along the transfer route corresponding to the specified abnormal status,

wherein the transfer control portion transfers again papers stored in the pool portion, after the sensor output abnormality detecting portion detects normal status, along the transfer route to pass through the discriminating [route] portion.

4. (ONCE AMENDED) The [A] paper processing device according to claim 1, wherein the sensor output abnormality detecting portion carries out the detecting process of the sensor output before the start of one process, and when the specified abnormal status is detected in the detecting process carried out before the start of the one process, carries out a detecting process at every time when one of papers to be objectives of the one process passes through the discriminating portion, after the start of the one process, and until the number of the papers passing through the discriminating portion reaches a specified number, and until normal status is detected by the sensor output abnormality detecting portion.

5. (ONCE AMENDED) The [A] paper processing device according to claim 1, wherein the sensor output abnormality detecting portion carries out the detecting process of the sensor output before the start of one process, and when the specified abnormal status is detected in the detecting process carried out before the start of the one process, it starts the one process and carries out a detecting process after a specified number of papers to be objectives of the one process has passed through the discriminating portion.

6. (ONCE AMENDED) The [A] paper processing device according to claim 1, wherein the paper processing device can freely transfer mock papers different from papers to be objectives of processing along a transfer route passing through the discriminating portion, the transfer control portion starts the one process after the specified abnormal status is detected in detecting process carried out before the start of one process by the sensor output abnormality detecting portion, and when it is detected that recovery to normal status has not

been achieved even in the detecting process carried out at a specified moment after the start of the one process, the transfer control portion suspends transfer of papers after the specified moment among papers to be objectives of the one process, and transfers the mock papers along a transfer route passing through the discriminating portion, and

the sensor output abnormality detecting portion carries out a detecting process also after the mock papers pass through the discriminating portion.

7. (ONCE AMENDED) The [A] paper processing device according to claim 1, wherein the sensor is a line sensor comprising a plurality of sensor devices arranged in width direction crossing the paper passing direction at the discriminating portion, and

the sensor output abnormality detecting portion detects that the output of a specified number or less of the sensor devices among the plural sensor devices is faulty as the specified abnormal status.

8. (ONCE AMENDED) The [A] paper processing device according to claim [1] 6, wherein for at least the detecting process to be carried out before the start of one process, the sensor output [error] abnormality detecting portion carries out a detecting process wherein the specified abnormal status is further divided into a specified first abnormal status and a specified second abnormal status, and also carries out the detecting process of the sensor output also after the mock papers pass through the discriminating portion, and

the transfer control portion starts the one process when either the first abnormal status among the specified abnormal statuses or normal status is detected in the initial detecting process carried out before the start of one process by the sensor output abnormality detecting portion, while when the second abnormal status among the specified abnormal statuses is detected in the initial detecting process, the transfer control portion transfers the mock papers along a transfer route passing through the discriminating portion prior to the start of the one process.

9. (ONCE AMENDED) The [A] paper processing device according to claim 8, wherein the mock papers are longer with respect to the width direction crossing the transfer direction than the papers to be objectives of processing,

the sensor is a line sensor comprising a plurality of sensor devices arranged even to [the] a position exceeding [the] a passing area of the papers to be objectives of processing, in

the width direction crossing the passing direction of the papers at the discriminating portion, and

the sensor output abnormality detecting portion detects that the output of a specified number or less of the sensor devices among the plural sensor devices is faulty as a specified abnormal status, and detects the status wherein all the sensor devices with faulty output are sensor devices in the passing area of the papers to be objectives of processing as a first abnormal status among the specified abnormal statuses, and also detects the status wherein sensor devices out of the passing area are included in the sensor devices with faulty output as a second abnormal status among the specified abnormal statuses.